



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,728	07/17/2003	Pedro Lamartine de Faria	17945	1583
26794	7590	02/18/2005	EXAMINER	
TYCO ELECTRONICS CORPORATION 4550 NEW LINDEN HILL ROAD, SUITE 450 WILMINGTON, DE 19808			FIGUEROA, FELIX O	
		ART UNIT	PAPER NUMBER	
			2833	

DATE MAILED: 02/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/621,728	DE FARIA ET AL.	
	Examiner	Art Unit	
	Felix O. Figueiroa	2833	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 30 December 2004.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 2,6-22,25 and 26 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 2,6-22,25 and 26 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 22 November 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 3, 2004 has been entered.

Claim Objections

Claim 22 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim (claim 18, from which it depends). Applicant is required to cancel the claim, or amend the claim to place the claim in proper dependent form, or rewrite the claim in independent form.

Claims 25 and 26 are objected to as being in improper form because they depend on claim 24, which has been canceled. It is assumed that claim 25 should depend on claim 18.

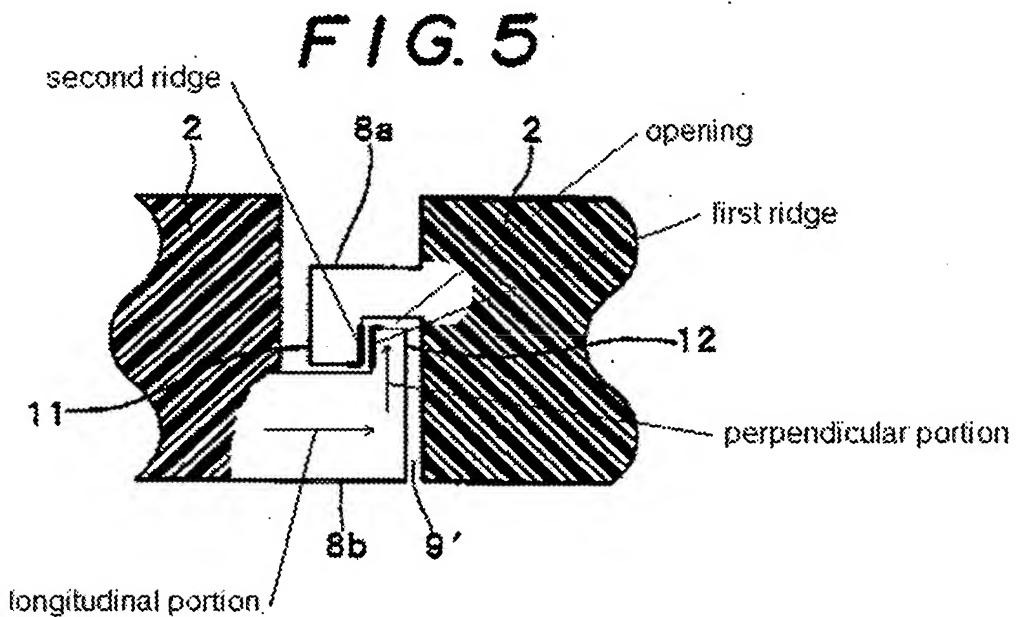
Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 6-22, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuoka (US 5,443,404) in view of Weber et al. (US 4,790,763).

Regarding claim 7, Matsuoka discloses a connector assembly comprising: a first housing (2) having a retention arm (12), the retention arm having a longitudinal portion and a perpendicular portion, the perpendicular portion including a first ridge (see following figure); and a second housing (2) having an opening (9') for receiving the retention arm, the second housing including a second ridge within the opening (see following figure), wherein the first and second ridges engage to hold the retention arm within the opening; wherein the first housing and the second housing have a lower side (bottom of Fig.3) for connecting to a PCB (7); wherein the retention arm can move longitudinally within the opening from a point where the first ridge and the second ridge engage to a point where the retention arm abuts an end of the opening so as to ensure the proper alignment of the guide pins with the PCB.



Matsuoka discloses substantially the claimed invention except for the non-electrically conductive guide pins. Weber teaches a connector assembly with the lower sides including guide pins (12) that align the housings with the PCB to hold the housings in position prior to soldering and during assembly of components (col. 4 lines 21-27). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to form at least one of the lower sides of the housings of Matsuoka with non-electrically conductive guide pins, as taught by Weber, to hold the housings in position prior to soldering and during assembly of components.

Regarding claim 2, Matsuoka discloses the first housing and the second housing being moveably connected in a longitudinal direction.

Regarding claim 6, Matsuoka discloses the lower sides having pins (4a) to connect to the PCB.

Regarding claims 8 and 9, Matsuoka discloses the first and second housings including at least one guide for aligning the first and second housings (please note that at least the front wall, bottom in Fig.2, provides a guide for aligning the housings).

Regarding claim 10, Matsuoka discloses the first housing including a stop for preventing the retention arm from passing completely through the opening (please note that the arm has at least one surface that stop the arm from passing completely through the opening).

Regarding claim 11, Matsuoka, as modified, discloses substantially the claimed invention except for the plurality of retention arms and openings. It would have been obvious to one having ordinary skill in the art at the time the invention was made to a

plurality of retention arms and opening, as shown by Weber, in order to provide a redundant and more efficient connection and since it has been held that mere duplication of parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Regarding claim 12, Matsuoka discloses an adjustable pin header assembly (2) for mounting to a PCB (7), the assembly accepting peripheral circuit elements (col.1 lines 31-32) and providing connectivity between the peripheral circuit elements and the PCB, the assembly comprising at least one first header (2) having an upper side for receiving a first set of peripheral circuit elements, a lower side having contact pins (4), and a female connection mechanism (9'); and at least one second header (2) having an upper side for receiving a second set of peripheral circuit elements, a lower side having contact pins (4), and a male connection mechanism (12), wherein the at least one second header is secured to the at least one first header by mounting the male connection mechanism in the female connection mechanism wherein the male connection mechanism comprises a retention arm (12) including a longitudinal portion and a perpendicular portion (as shown in the figure above), the perpendicular portion including a first ridge (as shown in the figure above), wherein the female connection mechanism comprises an opening (9') for receiving the retention arm, the opening including a second ridge therein (as shown in the figure above), wherein the first ridge and the second ridge engage one another to hold the retention arm in the opening, and wherein the retention arm can move longitudinally within the opening from a point where the first ridge and the second ridge engage to a point where the retention arm abuts an

end of the opening so as to ensure the proper alignment of the guide pins of the at least one first and second headers with the PCB.

Matsuoka discloses substantially the claimed invention except for the non-electrically conductive guide pins. Weber teaches a connector assembly with the lower sides including guide pins (12) that align the housings with the PCB to hold the housings in position prior to soldering and during assembly of components (col. 4 lines 21-27). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to form at least one of the lower sides of the housings of Matsuoka with non-electrically conductive guide pins, as taught by Weber, to hold the housings in position prior to soldering and during assembly of components.

Regarding claim 13, Matsuoka discloses that the at least one first header and the at least one second header can move longitudinally with respect to one another (see Figs.4&5).

Regarding claim 14, Matsuoka shows that the male connection mechanism can move longitudinally within the female connection mechanism (see Figs.4&5).

Regarding claim 15, Matsuoka discloses a PCB assembly comprising: a PCB (7); and a movable pin header (2) assembly connected to the PCB, wherein the movable pin header assembly includes a first header (2, left in Fig.4) having a male connection mechanism (12) formed therein; a second header (2, right in Fig.4) having a female connection mechanism (9') formed therein and the first header and the second header being mounted together; wherein the first header and the second header each have a lower side for connecting to the PCB; wherein the male connection mechanism

Art Unit: 2833

comprises a retention arm (12) including a longitudinal portion and a perpendicular portion, the perpendicular portion including a first ridge; wherein the female connection mechanism comprises an opening (9') for receiving the retention arm, the opening including a second ridge therein, wherein the first ridge and the second ridge engage one another to hold the retention arm in the opening, and wherein the retention arm can move longitudinally within the opening from a point where the first ridge and the second ridge engage to a point where the retention arm abuts an end of the opening so as to ensure the proper alignment of the guide pins of the first and second headers with the PCB.

Matsuoka discloses substantially the claimed invention except for the non-electrically conductive guide pins. Weber teaches a connector assembly with the lower sides including guide pins (12) that align the housings with the PCB to hold the housings in position prior to soldering and during assembly of components (col. 4 lines 21-27). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to form at least one of the lower sides of the housings of Matsuoka with non-electrically conductive guide pins, as taught by Weber, to hold the housings in position prior to soldering and during assembly of components.

Regarding claim 16, Matsuoka discloses the PCB including vias (see Fig.3) and the movable pin header assembly includes pins (4) in alignment with the vias.

Regarding claim 17, Matsuoka discloses that the first header and the second header can move longitudinally with respect to one another prior to connection to the PCB to allow for alignment of the pins and the vias (see Figs.4&5).

Regarding claim 18, Matsuoka discloses a method for manufacturing an adjustable pin header assembly, the method comprising: fabricating a plurality of headers (2), wherein at least a first subset of the plurality of headers include a female connection mechanism (9') and at least a second subset of the plurality of headers include a male connection mechanism (12); and connecting at least a first header (2, left in Fig.4) having the male connection mechanism to at least a second header (2, right in Fig.4) having the female connection mechanism, wherein the first header and the second header can move longitudinally with respect to each other, wherein the first subset of the plurality of headers and the second subset of the plurality of headers each have a lower side for connecting to a PCB (7), wherein the male connection mechanism comprises a retention arm (12) including a longitudinal portion and a perpendicular portion, the perpendicular portion including a first ridge; wherein the female connection mechanism comprises an opening (9') for receiving the retention arm, said opening including a second ridge therein, wherein the first ridge and the second ridge engage one another to hold the retention arm in the opening, and wherein the retention arm can move longitudinally within the opening from a point where the first ridge and the second ridge engage to a point where the retention arm abuts an end of the opening so as to ensure the proper alignment.

Matsuoka discloses substantially the claimed invention except for the non-electrically conductive guide pins. Weber teaches a connector assembly with the lower sides including guide pins (12) that align the housings with the PCB to hold the housings in position prior to soldering and during assembly of components (col. 4 lines

Art Unit: 2833

21-27). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to form at least one of the lower sides of the housings of Matsuoka with non-electrically conductive guide pins, as taught by Weber, to hold the housings in position prior to soldering and during assembly of components.

Regarding claim 19, Matsuoka discloses that the male connection mechanism can move within the female connection mechanism to allow the first header to move longitudinally with respect to the second header.

Regarding claim 20, Matsuoka discloses each of the plurality of headers being fabricated independently of each other.

Regarding claim 21, Matsuoka discloses fabricating includes fabricating a housing for each of the headers, wherein each of the housings include receptacles for receiving pins (4); and inserting pins in appropriate receptacles in the housings, wherein the pins are used to connect the headers to a printed circuit board.

Regarding claim 22, Matsuoka discloses at least a subset of the housings have a male connection mechanism formed therein and at least a subset of the housings have a female connection mechanism formed therein.

Regarding claim 25, Matsuoka discloses the connecting including inserting the retention arm in the opening until the first ridge passes the second ridge.

Regarding claim 26, Matsuoka discloses that the retention arm can move within the opening from a point where the first ridge and the second ridge engage to a point where the terminating end of the retention arm abuts a terminating end of the opening.

Response to Arguments

Applicant's arguments with respect to claims 7, 12, 15 and 18 have been considered but are moot in view of the new grounds of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Felix O. Figueroa whose telephone number is (571) 272-2003. The examiner can normally be reached on Mon.-Fri., 10:00am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula A. Bradley can be reached on (571) 272-2800 Ext. 33. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ffr



RENEE LUEBKE
PRIMARY EXAMINER